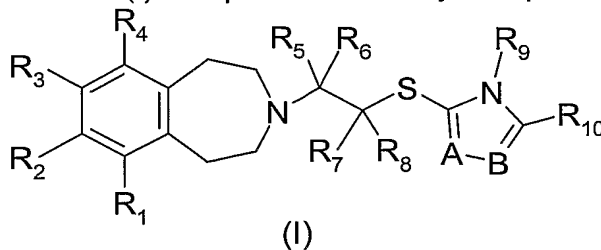


Claims

1. A compound of formula (I) or a pharmaceutically acceptable salt thereof:



5 wherein

- $R_1$  and  $R_4$  are independently selected from the group consisting of hydrogen, fluoro, chloro, bromo,  $C_{1-2}$ alkyl,  $C_1$ alkoxy, halo $C_{1-2}$ alkyl, halo $C_1$ alkoxy, hydroxy, cyano and nitro;
- $R_2$  and  $R_3$  are independently selected from the group consisting of:

10 halogen, hydroxy, cyano, nitro,  $C_{1-4}$ alkyl, halo $C_{1-4}$ alkyl,  $C_{3-6}$ cycloalkyl,  $C_{1-4}$ alkoxy, halo $C_{1-4}$ alkoxy,  $C_{1-4}$ alkoxy $C_{1-4}$ alkoxy,  $C_{1-4}$ alkylthio,  $C_{1-4}$ alkoxy $C_{1-4}$ alkyl,  $C_{3-6}$ cycloalkyl $C_{1-4}$ alkoxy,  $C_{1-4}$ alkanoyl,  $C_{1-4}$ alkoxycarbonyl,  $C_{1-4}$ alkoxycarbonyl $C_{1-4}$ alkyl,  $C_{1-4}$ alkylsulfonyl,  $C_{1-4}$ alkylsulfonyloxy, halo $C_{1-4}$ alkylsulfonyl, halo $C_{1-4}$ alkylsulfonyloxy,  $C_{1-4}$ alkylsulfonyl $C_{1-4}$ alkyl,  $C_{1-4}$ alkylsulfonamido,  $C_{1-4}$ alkylsulfonamido $C_{1-4}$ alkyl, heterocyclyl, aryl, aryl $C_{1-4}$ alkoxy, aryloxy, arylthio, arylmethyl, aroyl, aryloxymethyl, arylsulfonyl, aryl-NR' (wherein R' is hydrogen or  $C_{1-4}$ alkyl), arylsulfonyloxy, arylsulfonyl $C_{1-4}$ alkyl, arylsulfonamido, arylcarboxamido, arylsulfonamido $C_{1-4}$ alkyl, arylcarboxamido $C_{1-4}$ alkyl, aroyl $C_{1-4}$ alkyl, aryl $C_{1-4}$ alkanoyl, a group  $R_{11}CON(R_{12})(CH_2)_r$ ,  $R_{11}R_{12}NCO(CH_2)_r$  or  $R_{11}R_{12}NSO_2(CH_2)_r$  (in which r is 0, 1, 2, 3 or 4, and each of  $R_{11}$  and  $R_{12}$  is independently hydrogen or  $C_{1-4}$ alkyl, or in the groups  $R_{11}CON(R_{12})(CH_2)_r$ ,  $R_{11}R_{12}NCO(CH_2)_r$  and  $R_{11}R_{12}NSO_2(CH_2)_r$ ,  $R_{11}CONR_{12}$  or  $R_{11}R_{12}N$  together form a 4-, 5-, 6- or 7-membered azacyclic group optionally containing one additional O, N or S atom in the azacycle and having 3-8 carbon atoms (including the carbon atoms contained in any optional substituent(s) of the azacycle)); wherein in any group containing an aryl moiety, the aryl may be substituted by one, two or three groups selected from the group consisting of halogen, hydroxy, cyano, nitro, amino,  $C_{1-4}$ alkyl, halo $C_{1-4}$ alkyl,  $C_{1-4}$ alkoxy, halo $C_{1-4}$ alkoxy,  $C_{1-4}$ alkylenedioxy,  $C_{1-4}$ alkanoyl,  $C_{1-4}$ alkylsulfonyl, halo $C_{1-4}$ alkylsulfonyl,  $C_{1-4}$ alkylamino,  $C_{1-4}$ dialkylamino,  $R_{13}R_{14}NCO$  (in which  $R_{13}$  and  $R_{14}$  are independently hydrogen or  $C_{1-4}$ alkyl, or  $R_{13}R_{14}N$  together form a 4-, 5-, 6- or 7-membered azacyclic group optionally containing one additional O, N or S atom in the azacycle and having 3-8 carbon atoms (including the carbon atoms contained in any optional substituent(s) of the azacycle));

- A and B are independently N or CH;
- $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$  and  $R_9$  are independently hydrogen or  $C_{1-4}$ alkyl;

- R<sub>10</sub> is a group of the formula (a) or (b):



5            wherein:

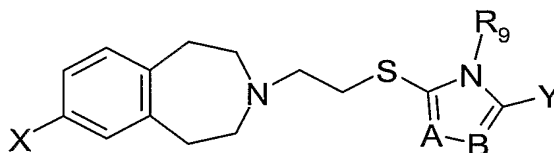
- Z is C<sub>1-4</sub>alkyl, haloC<sub>1-4</sub>alkyl, C<sub>3-6</sub>cycloalkyl, phenyl, heterocyclyl, a 5- or 6-membered heteroaromatic ring or a 8- to 11-membered bicyclic group, any of which is optionally substituted by 1, 2, 3 or 4 substituents selected from the group consisting of: halogen, hydroxy, oxo, cyano, nitro, C<sub>1-4</sub>alkyl, C<sub>1-4</sub>alkoxy, haloC<sub>1-4</sub>alkyl, haloC<sub>1-4</sub>alkoxy, C<sub>1-4</sub>alkylenedioxy, C<sub>1-4</sub>alkanoyl, C<sub>1-4</sub>alkylsulfonyl, C<sub>1-4</sub>alkylsulfonyloxy, haloC<sub>1-4</sub>alkylsulfonyl, haloC<sub>1-4</sub>alkylsulfonyloxy, C<sub>1-4</sub>alkylsulfinyl, C<sub>1-4</sub>alkylthio, R<sub>17</sub>SO<sub>2</sub>N(R<sub>18</sub>)-, R<sub>17</sub>R<sub>18</sub>NSO<sub>2</sub>-, R<sub>17</sub>R<sub>18</sub>N-, R<sub>17</sub>R<sub>18</sub>NCO-, R<sub>17</sub>CONR<sub>18</sub>- and a 5- or 6-membered heteroaromatic ring which is optionally substituted by one or two C<sub>1-2</sub>alkyl, haloC<sub>1-2</sub>alkyl or R<sub>17</sub>R<sub>18</sub>N- (wherein R<sub>17</sub> and R<sub>18</sub> are independently hydrogen or C<sub>1-4</sub>alkyl, or R<sub>17</sub> and R<sub>18</sub> together form C<sub>3-6</sub>alkylene); and wherein substituents positioned *ortho* to one another may be linked to form a 5- or 6-membered ring; and
- R<sub>15</sub> and R<sub>16</sub> are independently hydrogen or C<sub>1-4</sub>alkyl and t is 1, 2, 3 or 4, or -(CR<sub>15</sub>R<sub>16</sub>)<sub>t</sub>- forms a C<sub>3-6</sub>cycloalkylene linker.

2.        A compound as claimed in claim 1, wherein R<sub>3</sub> is hydrogen.

25        3.        A compound as claimed in claim 1 or claim 2, wherein R<sub>2</sub> is C<sub>1-4</sub>alkyl, haloC<sub>1-4</sub>alkyl, halogen, C<sub>1-4</sub>alkylsulfonyl (e.g. methylsulfonyl or ethylsulfonyl), haloC<sub>1-4</sub>alkylsulfonyl (e.g. trifluoromethylsulfonyl), C<sub>1-4</sub>alkylsulfonyloxy (e.g. methylsulfonyloxy), haloC<sub>1-4</sub>alkylsulfonyloxy (e.g. trifluoromethylsulfonyloxy), R<sub>11</sub>R<sub>12</sub>NSO<sub>2</sub> (where each of R<sub>11</sub> and R<sub>12</sub> is independently hydrogen or C<sub>1-4</sub>alkyl or R<sub>11</sub>R<sub>12</sub>N together form a 4-, 5-, 6- or 7-membered azacyclic group optionally containing one additional O, N or S atom in the azacycle and having 3-8 carbon atoms, e.g. a piperidin-1-ylsulfonyl, pyrrolidin-1-ylsulfonyl or 1,4-morpholin-4-ylsulfonyl), a 5- or 6-membered heteroaromatic or a heterocyclyl, each of which is optionally substituted by one or two substituents selected from: halogen, cyano, C<sub>1-2</sub>alkyl (e.g. methyl or trifluoromethyl), C<sub>1-2</sub>alkoxy (e.g. methoxy), C<sub>1-2</sub>alkylenedioxy (e.g. methylenedioxy), C<sub>1-3</sub>alkanoyl (e.g. acetyl), C<sub>2</sub>alkanoylamino (e.g. acetylamino), haloC<sub>1</sub>alkylsulfonyl (e.g. trifluoromethylsulfonyl) and methylsulfonyl.

40        4.        A compound as claimed in claim 3, wherein R<sub>2</sub> is bromo, cyano, hydroxy, chloro, methoxy, tert-butyl, methylsulfonyl, ethylsulfonyl, N,N-dimethylaminosulfonyl, pyrrolidin-1-ylsulfonyl, 1,4-morpholin-4-ylsulfonyl, methylsulfonyloxy, pyrazolyl (eg pyrazol-5-yl), 1,3-dimethyl-pyrazol-5-yl, pyrazin-2-yl, 5-methyl-oxazol-2-yl or 5-methyl-isoxazol-3-yl.

5. A compound as claimed in any of claims 1-4 wherein both R<sub>1</sub> and R<sub>4</sub> are hydrogen.
6. A compound as claimed in any of claims 1-5, wherein A and B are both nitrogen.
- 5 7. A compound as claimed in any of claims 1-6 wherein R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub> and R<sub>8</sub> are all hydrogen.
8. A compound as claimed in any of claims 1-7, wherein R<sub>9</sub> is methyl.
- 10 9. A compound as claimed in any of claims 1-8, wherein R<sub>10</sub> is a group of formula (a).
10. A compound as claimed in claim 9, wherein in formula (a), Z is phenyl, fluorophenyl, or quinoliny, each of which is unsubstituted or substituted by one or more substituents selected from: halogen, or cyano, C<sub>1-2</sub>alkyl (e.g. methyl), haloC<sub>1-2</sub>alkyl (e.g. trifluoromethyl), C<sub>1-2</sub>alkoxy (e.g. methoxy), haloC<sub>1-4</sub>alkoxy (e.g. trifluoromethoxy), C<sub>1-2</sub>alkylenedioxy (e.g. methylenedioxy), C<sub>2-3</sub>alkanoyl (e.g. acetyl), C<sub>2</sub>alkanoylamino (e.g. acetylamino), methylsulfonyl, haloC<sub>1</sub>alkylsulfonyl (e.g. trifluoromethylsulfonyl), C<sub>1</sub>alkylsulfonyloxy (e.g. methylsulfonyloxy), C<sub>1</sub>alkylaminosulfonyl (e.g. methylaminosulfonyl), C<sub>1</sub>alkylsulfonylamino (e.g. methylsulfonylamino) and C<sub>1</sub>alkylaminocarbonyl (e.g. methylaminocarbonyl).
- 15
- 20 11. A compound as claimed in claim 1 having a formula (IA) or a pharmaceutically acceptable salt thereof:

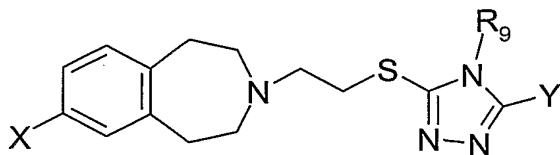


(IA)

25 wherein:

- A, B and R<sub>9</sub> are as defined in claim 1;
  - X is a 5- or 6-membered heteroaromatic ring optionally substituted by 1, 2 or 3 substituents selected from the group consisting of: halogen, cyano, C<sub>1-2</sub>alkyl, fluoroC<sub>1-2</sub>alkyl, C<sub>1-2</sub>alkoxy, C<sub>1-3</sub>alkanoyl, C<sub>2</sub>alkanoylamino, fluoroC<sub>1</sub>alkylsulfonyl and methylsulfonyl; and
  - Y is phenyl, heterocyclyl, a 5- or 6-membered heteroaromatic ring or a 8- to 11-membered bicyclic group, any of which is optionally substituted by 1, 2, 3 or 4 substituents selected from the group consisting of: halogen, cyano, C<sub>1-2</sub>alkyl, haloC<sub>1-2</sub>alkyl, C<sub>1-2</sub>alkoxy, haloC<sub>1-2</sub>alkoxy, C<sub>1-2</sub>alkylenedioxy, C<sub>2-3</sub>alkanoyl, C<sub>2</sub>alkanoylamino, methylsulfonyl, haloC<sub>1</sub>alkylsulfonyl, methylsulfonyloxy, methylaminosulfonyl, methylsulfonylamino and methylaminocarbonyl.
- 30
- 35

12. A compound as claimed in claim 1 having a formula (IB) or a pharmaceutically acceptable salt thereof:



(IB)

wherein

- X is isoxazolyl or pyrazolyl ring optionally substituted by 1, 2 or 3 substituents selected from the group consisting of: halogen, cyano, C<sub>1-2</sub>alkyl, fluoroC<sub>1-2</sub>alkyl, C<sub>1-2</sub>alkoxy, C<sub>1-3</sub>alkanoyl, C<sub>2</sub>alkanoylamino, fluoroC<sub>1</sub>alkylsulfonyl and methylsulfonyl; and
- Y is phenyl, heterocyclyl, a 5- or 6-membered heteroaromatic ring or a 8- to 11-membered bicyclic group, any of which is optionally substituted by 1, 2, 3 or 4 substituents selected from the group consisting of: halogen, cyano, C<sub>1-2</sub>alkyl, haloC<sub>1-2</sub>alkyl, C<sub>1-2</sub>alkoxy, haloC<sub>1-2</sub>alkoxy, C<sub>1-2</sub>alkylenedioxy, C<sub>2-3</sub>alkanoyl, C<sub>2</sub>alkanoylamino, methylsulfonyl, haloC<sub>1</sub>alkylsulfonyl, methylsulfonyloxy, methylaminosulfonyl, methylsulfonylamino and methylaminocarbonyl.

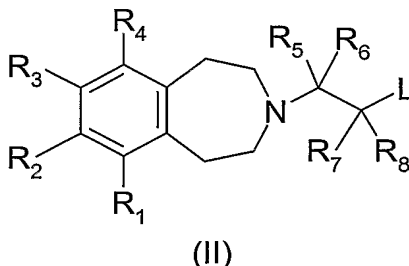
13. A compound as claimed in claim 1, which is:

- 7-(5-Methyl-3-isoxazolyl)-3-(2-[[4-methyl-1,3-oxazol-5yl]-4H-1,2,4-triazol-3-yl]thio)ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(5-Methyl-3-isoxazolyl)-3-(2-[[4-methyl-5-(tetrahydro-2H-pyran-4-yl)-4H-1,2,4-triazol-3-yl]thio]ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(5-Methyl-3-isoxazolyl)-3-(2-[[4-methyl-5-(2-methyl-5-quinoliny)-4H-1,2,4-triazol-3-yl]thio]ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(5-Methyl-3-isoxazolyl)-3-(2-[[4-methyl-5-(2-methyl-6-quinoliny)-4H-1,2,4-triazol-3-yl]thio]ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(1,3-Dimethyl-1H-pyrazol-5-yl)-3-(2-[[4-methyl-5-(2-methyl-5-quinoliny)-4H-1,2,4-triazol-3-yl]thio]ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(1,3-Dimethyl-1H-pyrazol-5-yl)-3-(2-[[4-methyl-5-(5-methyl-2-pyraziny)-4H-1,2,4-triazol-3-yl]thio]ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 3-(2-[[5-(3,4-Difluorophenyl)-4-methyl-4H-1,2,4-triazol-3-yl]thio]ethyl)-7-(1,3-dimethyl-1H-pyrazol-5-yl)-2,3,4,5-tetrahydro-1H-3-benzazepine
- 7-(5-Methyl-3-isoxazolyl)-3-(2-[[4-methyl-5-(2-methyl-3-pyridiny)-4H-1,2,4-triazol-3-yl]thio]ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine formate
- 7-(5-Methyl-3-isoxazolyl)-3-(2-[[4-methyl-5-(4-pyridaziny)-4H-1,2,4-triazol-3-yl]thio]ethyl)-2,3,4,5-tetrahydro-1H-3-benzazepine formate

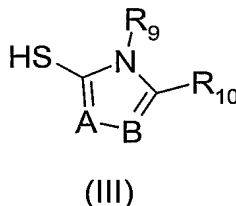
- 7-(5-Methyl-3-isoxazolyl)-3-[2-({4-methyl-5-[2-methyl-6-(trifluoromethyl)-3-pyridinyl]-4*H*-1,2,4-triazol-3-yl}thio)ethyl]-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
  - 3-(2-{{5-(1,5-Dimethyl-1*H*-pyrazol-4-yl)-4-methyl-4*H*-1,2,4-triazol-3-yl}thio}ethyl)-7-(5-methyl-3-isoxazolyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
  - 3-(2-{{5-(5-Chloro-1-methyl-1*H*-pyrazol-4-yl)-4-methyl-4*H*-1,2,4-triazol-3-yl}thio}ethyl)-7-(5-methyl-3-isoxazolyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
  - 7-(5-Methyl-3-isoxazolyl)-3-[2-({4-methyl-5-[4-(trifluoromethyl)phenyl]-4*H*-1,2,4-triazol-3-yl}thio)ethyl]-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
  - 3-(2-{{5-(3,4-Difluorophenyl)-4-methyl-4*H*-1,2,4-triazol-3-yl}thio}ethyl)-7-(5-methyl-3-isoxazolyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
  - 7-(5-Methyl-3-isoxazolyl)-3-(2-{{4-methyl-5-(5-methyl-2-pyrazinyl)-4*H*-1,2,4-triazol-3-yl}thio}ethyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
  - 3-(2-{{1-(1-Methylethyl)-5-(methylsulfonyl)-1*H*-benzimidazol-2-yl}thio}ethyl)-7-(5-methyl-3-isoxazolyl)-2,3,4,5-tetrahydro-1*H*-3-benzazepine formate
- or a pharmaceutically acceptable salt thereof.

14. A process for preparing a compound as defined in claim 1, which process comprises:

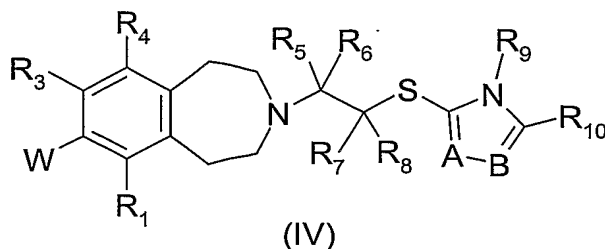
(a) reacting a compound of formula (II):



25 wherein  $R_1$  to  $R_8$  are as defined for formula (I) and L is a leaving group; with a compound of formula (III):



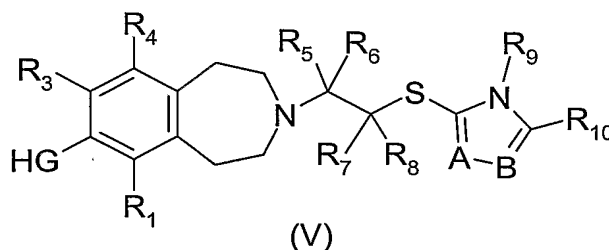
wherein A, B,  $R_9$  and  $R_{10}$  are as defined for formula (I); or



(b) for a compound of formula (I) wherein  $R_2$  is aryl, reacting a compound of formula (IV):

- 5 wherein  $R_1$ ,  $R_3$  to  $R_{10}$ , A and B are as defined for formula (I) and W is halogen or a trifluoromethylsulfonyloxy group, or W is a group M selected from a boron derivative (e.g. a boronic acid function  $B(OH)_2$ ) or a metal function such as trialkylstannyl (e.g.  $SnBu_3$ ), zinc halide or magnesium halide; with a compound aryl- $W^1$ , wherein aryl is as defined for formula (I),  $W^1$  is halogen or a trifluoromethylsulfonyloxy group when W is a group M or
- 10  $W^1$  is a group M as defined above when W is halogen or a trifluoromethylsulfonyloxy group; or

(c) for a compound of formula (I) wherein  $R_2$  is aryloxy or arylthio, reacting a compound of formula (V):



wherein G is oxygen or sulfur, and  $R_1$ ,  $R_3$  to  $R_{10}$ , A and B are as defined for formula (I); with a reagent serving to introduce the aryl group;

and optionally thereafter for any of the steps (a), (b) or (c):

- removing any protecting group(s); and/or
- forming a salt; and/or
- converting one compound of formula (I) to a different compound of formula (I).

15. A method of treating a condition for which modulation of dopamine  $D_3$  receptors is beneficial, which comprises administering to a mammal (e.g. human) in need thereof an effective amount of a compound of a compound of any of claims 1-13.

16. A method as claimed in claim 15, wherein the condition is substance abuse and/or drug dependency.

17. A method as claimed in claim 16, wherein the condition is craving for abused substance and/or relapse to drug seeking and drug taking behaviour.

5 18. Use of a compound as claimed in any of claims 1-13 in the manufacture of a medicament for the treatment of a condition in a mammal for which modulation of dopamine D3 receptors is beneficial.

19. Use as claimed in claim 18, wherein the condition is substance abuse and/or drug dependency.

10

20. Use as claimed in claim 19, wherein the condition is craving for abused substance and/or relapse to drug seeking and drug taking behaviour.

21. A compound as claimed in any of claims 1-13 for use in therapy.

15

22. A compound as claimed in any of claims 1-13 for use in the treatment of a condition in a mammal for which modulation of dopamine D3 receptors is beneficial.

20 23. A compound as claimed in any of claims 1-13 for use in the treatment of substance abuse and/or drug dependency.

24. A compound as claimed in any of claims 1-13 for use in the treatment of craving for abused substance and/or relapse to drug seeking and drug taking behaviour.

25 25. A pharmaceutical composition comprising a compound as claimed in any of claims 1-13 and a pharmaceutically acceptable carrier.